

IN THE CLAIMS:

What Is Claimed Is:

1. A system for managing persistent objects for an application accessing data, wherein said persistent objects are stored in at least one data source, comprising:

a persistent object framework to provide data from and perform functions on said persistent objects in accordance with said application; and

a cached set of persistent objects within said persistent object framework identified by said application and corresponding to said stored persistent objects.
2. The system of claim 1, wherein said application is a Java servlet.
3. The system of claim 1, wherein said functions include a function to create a persistent object.
4. The system of claim 1, wherein said functions include a function to cache a persistent object.
5. The system of claim 1, wherein said functions include a function to update a persistent object.

6. The system of claim 1, wherein said persistent object framework includes a set of data models corresponding to said stored persistent objects.
7. The system of claim 1, wherein said persistent object framework includes an object space to map said persistent objects to locations within said at least one data source.
8. An application system supported by a Java programming environment, comprising:
- a relational database storing a first set of persistent objects correlating to an application;
 - a LDAP repository storing a second set of persistent objects correlating to said application; and
 - a persistent object framework to provide data to said application from said first and second sets of persistent objects, wherein said persistent object framework caches a subset of said first and second persistent objects from said relational database and said LDAP repository.
9. The application system of claim 8, further comprising JDBC services coupling said persistent object framework with said relational database.

10. The application system of claim 8, further comprising business objects identified by said application and corresponding to said stored sets of persistent objects.

11. The application system of claim 8, wherein said persistent object framework includes a set of data models to create said persistent objects.

12. A method for managing persistent objects correlating to an application, comprising:

mapping a persistent object stored within a data source with a persistent object framework coupled to said application;

identifying said persistent object stored in said data source as applicable to said application; and

caching said persistent object within said persistent object framework.

13. The method of claim 12, further comprising creating said persistent object according to a data model stored by said persistent object framework.

14. The method of claim 13, wherein said creating includes determining initial values for attributes within said data model.

15. The method of claim 13, wherein said creating includes updating a revision indicator within said data model.
16. The method of claim 13, wherein said creating includes determining a persistent object identity for said newly created persistent object.
17. The method claim 13, wherein said creating includes defining subtypes for said newly created persistent object.
18. The method of claim 12, further comprising saving said persistent object by said persistent object framework.
19. The method of claim 12, further comprising accessing said persistent object by said persistent object framework.
20. The method of claim 12, further comprising updating said persistent object by said persistent object framework.
21. The method of claim 12, further comprising deleting said persistent object by said persistent object framework.

22. A method for searching persistent objects stored in at least one data source, wherein an application accesses said persistent objects for data, comprising:

receiving a search query for a persistent object at a persistent object framework;

determining a query type for said search query;

searching a cache within said persistent object framework for said persistent object according to said query type; and

searching said data source when said persistent object is not within said cache.

23. The method of claim 22, wherein said second searching step includes enabling a lazy load state.

24. The method of claim 23, further comprising determining whether said persistent object data is needed by said application.

25. The method of claim 22, wherein said searching steps comprise searching by a primary key.

26. The method of claim 22, wherein said searching steps comprise searching by a handle.

27. The method of claim 22, wherein said searching steps comprise searching by a unique key.
28. The method of claim 22, wherein said searching steps comprise searching by query filter.
29. The method of claim 22, wherein said searching steps comprise searching by relationship.
30. The method of claim 22, further comprising discarding said search query.
31. A method for managing persistent objects stored in at least one data source according to relationships between said persistent objects, wherein an application accesses said persistent objects for data, comprising:
- specifying a relationship between at least two objects;
 - retrieving said at least two objects according to said relationship;
 - performing a function on said relationship; and
 - synchronizing another relationship between said at least two objects according to the result of said function.

32. The method of claim 31, further comprising storing said relationship.

33. A method for resolving a stale data state between a persistent object and an application accessing said persistent object for data, comprising:

- executing a process of said application accessing said persistent object, wherein said persistent object includes a revision attribute;
- identifying said stale data state within said persistent object by a persistent object framework,
- retrying said process of said application accessing said persistent object; and
- incrementing said revision attribute.

34. A method for managing persistent objects within an application system, wherein said persistent objects are stored within a first data source and a second data source and said persistent objects provide data to an application, comprising:

- implementing a persistent object framework that caches said persistent objects correlating to said application by:
 - creating said persistent objects;
 - caching said persistent objects;

accessing said persistent objects;
updating said persistent objects;
searching said persistent objects;
deferring writes to said first and second data sources; and
controlling persistent storage of said persistent objects; and
retrieving said data from said first and second data sources when
requested by said persistent object framework.

35. A system for managing persistent objects correlating to an application,
comprising:

means for mapping a persistent object stored within a data source with
a persistent object framework coupled to said application;

means for identifying said persistent object stored in said data source
as applicable to said application; and

means for caching said persistent object within said persistent object
framework.

36. A computer program product comprising a computer useable medium
having computer readable code embodied therein for managing persistent objects
correlating to an application, the computer program product adapted when run on a
computer to effect steps, including:

mapping a persistent object stored within a data source with a
persistent object framework coupled to said application;

identifying said persistent object stored in said data source as
applicable to said application; and

caching said persistent object within said persistent object framework.

37. A system for searching persistent objects stored in at least one data
source, wherein an application accesses said persistent objects for data, comprising:

means for receiving a search query for a persistent object at a
persistent object framework;

means for determining a query type for said search query;

means for searching a cache within said persistent object framework
for said persistent object according to said query type; and

means for searching said data source when said persistent object is not
within said cache.

38. A computer program product comprising a computer useable medium
having computer readable code embodied therein for searching persistent objects
stored in at least one data source, wherein an application accesses said persistent
objects for data, the computer program product adapted when run on a computer to
effect steps, including:

receiving a search query for a persistent object at a persistent object framework;

determining a query type for said search query;

searching a cache within said persistent object framework for said persistent object according to said query type; and

searching said data source when said persistent object is not within said cache.

39. A system for managing persistent objects stored in at least one data source according to relationships between said persistent objects, wherein an application accesses said persistent objects for data, comprising:

means for specifying a relationship between at least two objects;

means for retrieving said at least two objects according to said relationship;

means for performing a function on said relationship; and

means for synchronizing another relationship between said at least two objects according to the result of said function.

40. A computer program product comprising a computer useable medium having computer readable code embodied therein for managing persistent objects stored in at least one data source according to relationships between said persistent objects, wherein an application accesses said persistent objects for data, the

computer program product adapted when run on a computer to effect steps,

including:

specifying a relationship between at least two objects;

retrieving said at least two objects according to said relationship;

performing a function on said relationship; and

synchronizing another relationship between said at least two objects

according to the result of said function.

41. A system for resolving a stale data state between a persistent object and an application accessing said persistent object for data, comprising:

means for executing a process of said application accessing said

persistent object wherein said persistent object includes a revision attribute;

means for retrying the process of said application accessing said

persistent object; and

means for incrementing said revision attribute.

means for identifying said stale data state within said persistent object by a persistent object framework,

42. A computer program product comprising a computer useable medium having computer readable code embodied therein for resolving a stale data state between a persistent object and an application accessing said persistent object for data, the computer program product adapted when run on a computer to effect steps, including:

executing a process of said application accessing said persistent object
wherein said persistent object includes a revision attribute;
identifying said stale data state within said persistent object by a
persistent object framework,
retrying a second process of said application accessing said persistent
object; and
incrementing said revision attribute.

43. A system for managing persistent objects within an application
system, wherein said persistent objects are stored within a first data source and a
second data source and said persistent objects provide data to an application,
comprising:

means for implementing a persistent object framework that caches
said persistent objects correlating to said application comprising:

means for creating said persistent objects;
means for caching said persistent objects;
means for accessing said persistent objects;
means for updating said persistent objects;
means for searching said persistent objects;
means for deferring writes to said first and second data sources;

and

means for controlling persistent storage of said persistent

objects; and

means for retrieving said data from said first and second data sources

when requested by said persistent object framework.

44. A computer program product comprising a computer useable medium having computer readable code embodied therein for managing persistent objects within an application system, wherein said persistent objects are stored within a first data source and a second data source and said persistent objects provide data to an application, the computer program product adapted when run on a computer to effect steps, including:

implementing a persistent object framework that caches said

persistent objects correlating to said application comprising:

creating said persistent objects;

caching said persistent objects;

accessing said persistent objects;

updating said persistent objects;

searching said persistent objects;

deferring writes to said first and second data sources; and

controlling persistent storage of said persistent objects; and

retrieving said data from said first and second data sources when requested by said persistent object framework.